

Attorney's Docket: 1999DE132
Serial No.: 09/722,760
Art Unit: 1753

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The paragraph of page 34, line 23 has been amended as follows:

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1 part of the compound from Preparation Example 1 is incorporated homogeneously into 99 parts of a toner binder (styrene/acrylate copolymer 60:40 DIALEC® S 309) in the course of 30 minutes by means of a kneader. The mixture is subsequently ground on a laboratory universal mill and then classified on a centrifugal sifter. The desired particle fraction (4 to 25 µm) is activated with a carrier which comprises magnetite particles of size 50 to 200 µm coated with styrene/methacrylate copolymer (90:10).-

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The paragraph of page 35, line 1 has been amended as follows:

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The procedure is as in Use Example 1, a polyester resin based on bisphenol A (ALMACRYL® T 500) being used instead of the styrene/acrylate copolymer and ferrite particles of size 50 – 200 µm coated with silicone being used as the carrier. -

IN THE CLAIMS

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Please amend claims 1-3, 5, 7, 10, 14 and 15 as follows:

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1) (Amended) A method of imparting, controlling or improving the charge of an electrophotographic toner or developer an electret material or in an electrostatic separation of a polymer process, comprising the step of adding a salt-like structured silicate in which the cation is H_4^+ , H_3O^+ , alkaline earth metal, earth metal or transition metal ion or a low molecular weight organic cation or a combination thereof and the anion is an island, cyclic, group, chain, ribbon, laminar or matrix silicate or a combination thereof to a binder of an electrophotographic toner or developer or of an electret material or to an electrostatic separation of a polymer process.

2) (Amended) The method as claimed in claim 1, wherein the silicate is an anion selected from the group consisting of montmorillonite, bentonite, hectorite, kaolinite, serpentine, talc, pyrophyllite, paragonite, vermiculite, beidellite, xantophyllite,

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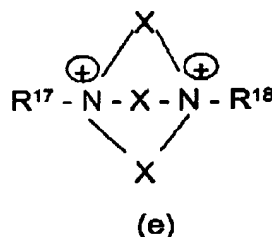
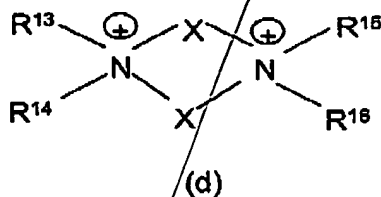
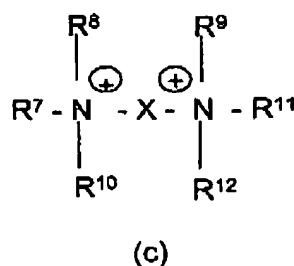
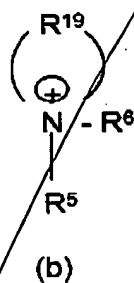
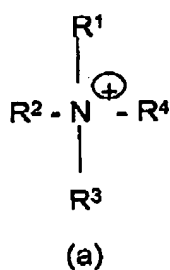
margarite, feldspar, zeolite, wollastonite, actinolite, amosite, crocidolite, sillimanite, nontronite, smectite, sepiolite, saponite, faujasite, permutite and sasil.

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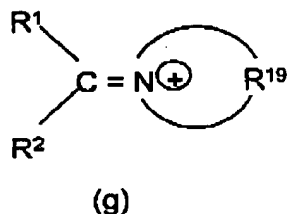
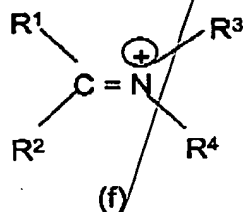
3) (Amended) The method as claimed in claim 1, wherein the cation is H_3O^+ , Na^+ , Rb^+ , Cs^+ , Be^{2+} , Mg^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Al^{3+} , TiO^{2+} , ZrO^{2+} , Zn^{2+} , Fe^{2+} , Fe^{3+} , Sn^{2+} , Sn^{4+} , Pb^{2+} , Pb^{4+} , Cr^{3+} , Mn^{4+} , Mn^{2+} , Co^{2+} , Co^{3+} , Cu^{2+} , Sc^{3+} , Ti^{4+} , Zr^{4+} , V^{5+} , Y^{3+} , Ni^{2+} , Mo^{6+} or W^{6+} .

5) (Amended) The method as claimed in claim 4, wherein the ammonium ion has one of the formulae (a) - (j)

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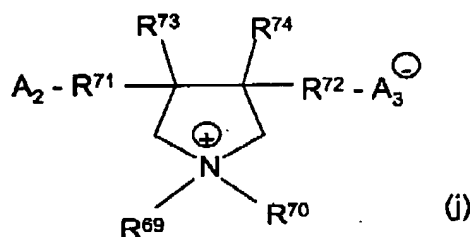
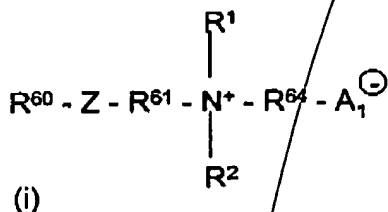
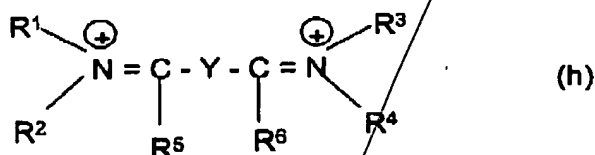
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in which

R^1 to R^{18} are identical or different and represent hydrogen, CN, $(\text{CH}_2)_{1-18}\text{CN}$, halogen, branched or unbranched C_1 - C_{32} -alkyl, mono- or polyunsaturated C_2 - C_{32} -alkenyl, C_1 - C_{22} -alkoxy, C_1 - C_{22} -hydroxyalkyl, C_1 - C_{22} -halogenoalkyl, C_2 - C_{22} -halogenoalkenyl, C_1 - C_{22} -aminoalkyl, $(\text{C}_1$ - C_{12})-trialkyl-ammonium- $(\text{C}_1$ - C_{22})-alkyl; $(\text{C}_1$ - C_{22})-alkylene- $(\text{C}=\text{O})\text{O}$ -(C_1 - C_{32})-alkyl, $(\text{C}_1$ - C_{22})-alkylene- $(\text{C}=\text{O})\text{O}$ -aryl, $(\text{C}_1$ - C_{22})-alkylene- $(\text{C}=\text{O})\text{NH}$ -(C_1 - C_{32})-alkyl, $(\text{C}_1$ - C_{22})-alkylene- $(\text{C}=\text{O})\text{NH}$ -aryl, $(\text{C}_1$ - C_{22})-alkylene- $\text{O}(\text{CO})$ -(C_1 - C_{32})-alkyl, $(\text{C}_1$ - C_{22})-alkylene- $\text{O}(\text{CO})$ -aryl, $(\text{C}_1$ - C_{22})-alkylene- $\text{NH}(\text{C}=\text{O})$ -(C_1 - C_{32})-alkyl, $(\text{C}_1$ - C_{22})-alkylene- NHCO -aryl,

wherein



are optionally inserted into the acid ester or acid amide bonds;

 $[(\text{C}_1$ - C_{12})-alkylene- $\text{O}]_{1-100}$ -H; aryl, $(\text{C}_1$ - C_{18})-alkylenearyl; $-(\text{O}-\text{SiR}'_2)_{1-32}-\text{O}-\text{SiR}'_3$, in

which R' has the meaning C_1 - C_{12} -alkyl, phenyl, benzyl or C_1 - C_{12} -alkoxy; heterocyclyl, C_1 - C_{18} -alkylene-heterocyclyl, wherein the aryl and heterocyclyl radicals are optionally mono- or polysubstituted on carbon atoms or heteroatoms by C_1 - C_{12} -alkyl, C_1 - C_4 -

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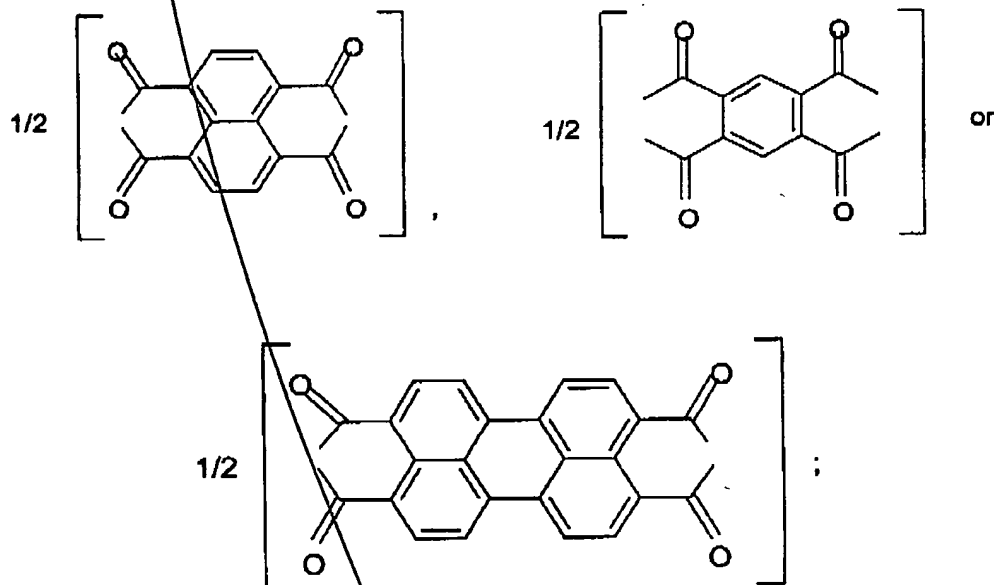
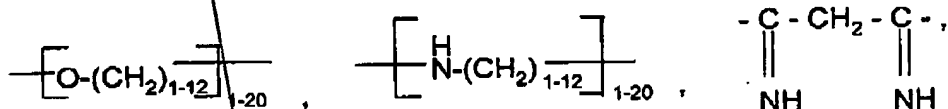
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alkenyl, C₁-C₄-alkoxy, hydroxy-(C₁-C₄)alkyl, amino-(C₁-C₄)alkyl, C₁-C₄-alkylimino, carboxyl, hydroxyl, amino, nitro, cyano, halogen, C₁-C₁₂-acyl, C₁-C₄-halogenoalkyl, C₁-C₄-alkylcarbonyl, C₁-C₄-alkylcarbonyloxy, C₁-C₄-alkoxycarbonyl, C₁-C₄-alkylaminocarbonyl, C₁-C₄-alkylcarbonylimino, C₆-C₁₀-arylcarbonyl, aminocarbonyl, aminosulfonyl, C₁-C₄-alkylaminosulfonyl, phenyl, naphthyl, or heteroaryl;

R¹⁹ represents C₄-C₁₁-alkylene, -(C₂H₄-O-)₁₋₁₇-(CH₂)₁₋₂-, -(C₂H₄-NR-)₁₋₁₇-(CH₂)₁₋₂-, in which R is hydrogen or C₁-C₁₂-alkyl;

X has the meaning of Y or -CO-CH₂-CO-,



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Y has the meaning $\text{-}\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{-}$, $\text{-}\overset{\text{S}}{\underset{\text{||}}{\text{C}}}\text{-}$, $\text{-}\overset{\text{NH}}{\underset{\text{||}}{\text{C}}}\text{-}$, $\text{-(CH}_2\text{)}_{1-18}\text{-}$,



or o-, p-, m-(C₆-C₁₄)-arylene or (C₄-C₁₄)-heteroarylene with 1, 2, 3 or 4 heteroatoms selected from the group consisting of N, O, S and a combination thereof;

R⁶⁰ represents C₁-C₃₂-acyl, C₁-C₂₂-alkyl, C₂-C₂₂-alkenyl, C₁-C₁₈-alkylene-C₆-C₁₀-aryl, C₁-C₂₂-alkylene-heterocyclyl, C₆-C₁₀-aryl or (C₄-C₁₄)-heteroaryl with 1, 2, 3 or 4 heteroatoms selected from the group consisting of N, O, S, and a combination thereof;

R⁶¹ and R⁶⁴ represent $\text{-(CH}_2\text{)}_{1-18}\text{-}$, C₁-C₁₂-alkylene-C₆-C₁₀-arylene, C₆-C₁₀-arylene, C₀-C₁₂-alkylene-heterocyclyl;

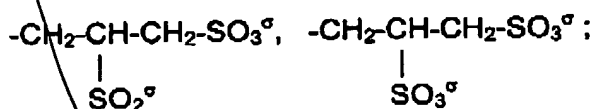
Z represents -NH- or -O-;

A₁⁻ and A₃⁻ represent -COO⁻, -SO₃⁻, -OSO₃⁻, -SO₂⁻, -COS⁻ or -CS₂⁻;

A₂ represents -SO₂Na, -SO₃Na, -SO₂H, -SO₃H or hydrogen;

R⁶⁹ and R⁷⁰ independently of one another represent hydrogen, C₁-C₃₂-alkyl, in which the alkyl chain optionally contain one or more of the groups -NH-CO-, -CO-NH-, -CO-O- or -O-CO-; C₁-C₁₈-alkylene-aryl, C₀-C₁₈-alkylene-heterocyclyl, C₁-C₁₈-hydroxyalkyl, C₁-C₁₈-halogenoalkyl, aryl, $\text{-(CH}_2\text{)}_3\text{-SO}_3^{\oplus}$.

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R^{71} and R^{72} represent $-(\text{CH}_2)_{1-12}-$; and
 R^{73} and R^{74} represent hydrogen or $\text{C}_1\text{--C}_{22}$ -alkyl.

7) (Amended) The method as claimed in claim 4, wherein the ammonium ion is an aliphatic or aromatic 5- to 12-membered heterocyclic radical with 1 to 4 atoms selected from the group consisting of N, O and S, or a combination thereof, belonging to the rings.

10) (Amended) The method as claimed in claim 9, wherein the metal is selected from the group consisting of Al, Mg, Ca, Sr, Ba, TiO, VO, Cr, V, Ti, Zr, Sc, Mn, Fe, Co, Ni, Cu, Zn and ZrO.

14) (Amended) An electrophotographic toner comprising 30 to 99.99% by weight of a binder, 0.01 to 50% by weight, of at least one salt of ionic structured silicates in which the cation is NH_4^+ , H_3O^+ , alkaline earth metal, earth metal or transition metal ion or a low molecular weight organic cation or a combination thereof and the anion is an island, cyclic, group, chain, ribbon, laminar or matrix silicate or a combination thereof, based on the total weight of the electrophotographic toner.

15) (Amended) An electrophotographic toner as claimed in claim 14, comprising 40 to 99.5% by weight of a binder, 0.05 to 20% by weight of at least one salt of ionic structured silicates in which the cation is NH_4^+ , H_3O^+ , alkaline earth metal, earth metal or transition metal ion or a low molecular weight organic cation or a combination thereof and the anion is an island, cyclic, group, chain, ribbon, laminar or matrix silicate or a combination thereof, based on the total weight of the electrophotographic toner.

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Please add new claims 16- 21 as follows:

16. (New) The method of claim 4, wherein the ammonium ion is an aliphatic or aromatic 5- to 12-membered heterocyclic radical with 1 to 4 atoms selected from the group consisting of N, O and S, or a combination thereof, belonging to the rings, wherein 2 to 8 rings are fused.

17. (New) The method as claimed in claim 9, wherein the metal is selected from the group consisting of Al, Mg, Ca, Sr, Ba, TiO, VO, Cr, V, Ti, Zr, Sc, Mn, Fe, Co, Ni, Cu, Zn and ZrO, and the metal complex contains one or more further ligands.

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18. (New) A method of imparting, controlling or improving the charge of an electrophotographic toner or developer, of a powder coating, of an electret material or in an electrostatic separation of a polymer process, comprising the steps of adding a salt-like structured silicate in which the cation is NH_4^+ , H_3O^+ , an alkali metal, alkaline earth metal, earth metal or transition metal ion or a low molecular weight organic cation or a combination thereof and the anion is an island, cyclic, group, chain, ribbon, laminar or matrix silicate or a combination thereof to a binder of an electrophotographic toner or developer or of a powder coating, to an electret material or to an electrostatic separation of a polymer process to form a mixture, and electrostatically charging the mixture.

19. (New) An electrophotographic toner or developer comprising distearyldimethyl ammonium and bentonite.

20. (New) The electrophotographic toner as claimed in claim 14, further comprising 0.001 to 50% by weight, of a coloring agent, based on the total weight of the electrophotographic toner.

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21. (New) A composition comprising 30 to 99.99% by weight of a binder, 0.01 to 50% by weight, of at least one salt of ionic structured silicates in which the cation is NH_4^+ , H_3O^+ , alkaline earth metal, earth metal or transition metal ion or a low molecular weight organic cation or a combination thereof and the anion is an island, cyclic, group, chain, ribbon, laminar or matrix silicate or a combination thereof, based on the total weight of the composition, wherein the composition is selected from the group consisting of an electrophotographic developer, an electret material or an electrostatically separated polymer.
